Landbird Monitoring Protocol for Klamath Network Parks

Standard Operating Procedure (SOP) #4: Locating and Marking Field Sites

Version 1.0

Revision History Log:

Previous Version	Revision Date	Author	Changes Made	Reason for Change	New Version

This SOP explains the procedures for locating and marking point count stations, locating and marking mist net lanes, locating area search plots, and re-marking field sites and the associated Waypoint Tracking Form.

Locating and Marking Point Count Stations

New Routes

All field sites will be established and permanently marked prior to the commencement of field surveys. UTM coordinates and a map will be provided by the Project Lead for all point count stations along the route. Transects of 6-12 point count stations will be established at each location with stations placed ~250 m apart. If there is GPS coverage, each station will be laid out using GPS. If there is no GPS coverage, the observer will take a compass bearing and use a combination of pacing and a rangefinder to locate subsequent stations. If you encounter a station that is not possible or unsafe to reach, drop that station and use an over sample station as provided.

Completing the Site Description Form

A Site Description Form must be completed upon establishment of each route. This form includes UTMs and a written description of how to move from one station to another (SOP #1: Preparations and Equipment).

When surveying points that have been previously surveyed, it is necessary to complete the Site Description Form only if the following circumstances arise:

1. In the field, it is discovered that all or part of an established transect has become inaccessible due to some change (e.g., a landslide) since the time it was last visited. It is necessary to re-route the transect.
2. You believe that you are not at the location where the previous observer conducted the point count, for whatever reason you are unable to get to that location, and hence you

complete the count where you are. This situation should be avoided. If it does occur, mark the new location following the instructions outlined in SOP# 3: Using the Global Positioning System and include detailed notes on the Site Description Form describing the situation.

3. You wish to correct or improve upon the previous observer's description of the point or the travel features (see explanation of the Site Description Form, below).

The Site Description Form is attached at the end of this SOP and should be filled out as follows:

Page: The page number of current page and the total pages for the site description.

Site Code: The code for the point count route or mist net site.

Site Name: The name of the point count route or mist net site.

Month-Day-Year: The date of the survey using two numbers for month and day and four numbers for year.

State: The two letter abbreviation for the state where the field site is located.

Project/Region: The code for the project, NPLTM.

Observer Initials: The first, middle, and last name initials of the observer.

Datum: The map datum used to record the UTM coordinates. NAD 83 (North American Mean Datum 1983) UTM should be used unless otherwise instructed.

Point: The point count station number or mist net number.

UTM E (Easting): The six number UTM Easting coordinate value for the location taken from a GPS unit or map.

UTM N (Northing): The seven number UTM Northing coordinate value for the location taken from a GPS unit or map.

Gps Error (+/-): The accuracy of GPS unit's UTM location, recorded in meters.

Description: A brief description of how to get to the station and other notes that will help relocate points (the description should take up more than one line of the form if needed). Please make special note of any situations that will be helpful when revisiting routes, such as hazards, access issues (e.g., need key, land owner permission, four-wheel drive, mountain bike), sensitive wildlife issues, color of flagging used to mark stations, etc.

Bearing: The compass bearing for the direction of a mist net from the point location. This will be left blank for point count routes.

Installing Permanent Markers

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Mark each station as per the permit agreement with each park. This may include marking each station with a tag and/or flagging around the bole of a medium or large live tree that is nearest to the permanent marker and write the route and station number, along with "bird" and the year with a permanent black marker. Additional flagging should be hung from branches, to blow in the wind and increase visibility if the station is in a densely vegetated area.

If there are trees within 20 m of the point, use a metal tag to mark the nearest tree or another nearby tree if for some reason it is more prominent than the nearest tree. Use a paint pen or grease pencil to inscribe the tag with the following information:

1. Route name or mist net site name
2. Station number or net number

Then use a paint pen or grease pencil to write the same information again on the other side of the tag. Nail the tag to the back side of the tree you selected, being sure to fold it so it juts out perpendicular from the trunk, leaving both the inscribed label and the permanent marker label visible. The nail should not be hammered all of the way into the tree; instead, ½" of the nail should be protruding from the tree.

If there are no trees within 20 m of the origin point, mark the nearest shrub. Use paint pen or grease pencil to write the information indicated above on a metal tag and secure the tag to the shrub.

At each location, it is necessary to complete the Permanent Marker Information Form (attached at the end of this SOP) as follows:

Marker Number: Record the route name and station number or mist net site name and net number. If for some reason you did not mark a point that did not already have a marker, write "None" in this field and provide explanation at the bottom of the form, after "Marker Comments."

Install Date: Today's date in the mm/dd/yyyy format.

Removal Date: Leave blank unless removing a pre-installed marker, in which case enter the current date.

Marker Type: Indicate "metal tag."

Marker Substrate: Indicate the scientific name of the tree or shrub species to which the tag was nailed.

Height Above Ground: Indicate the approximate height above ground that the tag was placed on the tree or shrub, in meters.

Offset Dist: Indicate the distance between the actual survey point and the marker, in meters.

Offset Bearing: Indicate the declinated compass bearing *from the point to the marker.*

Marker Comments: Provide any additional information that might help someone find the marker in the future, including a brief description of how to find the marker from the sampling point.

Existing Routes

Use the GPS unit (refer to SOP #3: Using the Global Positioning System for details), compass, and previous years' written Field Site Description to locate an existing point count station that will be marked with a metal tag and may or may not be flagged in the field. If flagged, the flagging will include the route and station number, along with "bird" and the year the flagging was hung. If flagging is torn, faded, or missing, remove the old flagging and hang two pieces of new flagging around the bole of a medium or large live tree that is nearest to the UTM coordinates and mark the flagging with the information listed above using a permanent black marker. Each point count stations will have one of two possible metal tags, either a 5"x5" yellow sign that lists the route and site or a 1" circular brass tag that is stamped with "KLMN" and the point count number.

Locating the Mist Net Site

The mist net lanes have already been established as part of the ongoing Klamath Network Bird Inventory project at Oregon Caves. The array of mist net lanes has been located in areas that maximize bird captures. The lanes will be relocated each year by a biologist that has previously banded at the site. The mist net lanes have been delineated with waypoints in a GIS database. Maps and UTM coordinates can also be used to locate mist net lanes. Two area search plots have already been established within the mist net array. These plots were established so that area search surveys could be completed in conjunction with checking mist nets. Area search plots are delineated using a map, with mist net lanes and other landmarks as reference. The location information is included at the end of this SOP.

Re-marking Field Sites

Occasionally, field crews will encounter a field site where coordinates, maps, or written descriptions can be recorded with better accuracy than in previous years. In this instance, the map or written description should be re-created and stapled in front of the existing record and/or new UTM coordinates should be taken. This may occur in areas where routes were laid out with poor or no GPS coverage. In such instances, do not move the station on the ground; instead, take a new GPS reading. A new UTM coordinate should be taken for a station only if the new reading (taken with good satellite cover and low error rate) places the station more than 50 m from the current UTM coordinate. However, if improved technology becomes available that results in more accurate readings, then new coordinates should be recorded. Whenever a new UTM is recorded for an existing station, fill out the Waypoint Tracking Form with the date, your initials, the route and station number, old UTMs, new UTMs and error, and a detailed explanation of why the new UTM was recorded. This form is attached at the end of this SOP. In the rare instance that this occurs, it should be brought to the attention of the Project Lead. The Project Lead will then be responsible for updating the Location database following guidelines outlined in SOP #13: Data Validation and Verification.

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SITE DESCRIPTION FORM

Page of

Site (Code) | Site (Name) | Month | Day | Year

State | Project/Region | Obs. Initials | Datum

Point	UTM	GPS Error (+/-)	Description	Bearing
	E N	.		
	E N	.		
	E N	.		
	E N	.		
	E N	.		
	E N	.		
	E N	.		
	E N	.		
	E N	.		
	E N	.		
	E N	.		
	E N	.		

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Observer Name | Checked | Copied | Entered

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Permanent Marker Information

Project____________________ Route__________ Observer__________ Date______________________

Marker Number:_________________________ Install Date:______________ Removal Date:_____________

Marker Type:_______________________________ Marker Substrate:________________________________

Marker Location Information: Height Above Ground:_____(cm) Offset Dist:_____(m) Offset Bearing: _____º

Marker Comments:

____

____

Elevation____________ Aspect____________ Slope___________

Marker Number:_________________________ Install Date:______________ Removal Date:_____________

Marker Type:_______________________________ Marker Substrate:________________________________

Marker Location Information: Height Above Ground:_____(cm) Offset Dist:_____(m) Offset Bearing: _____º

Marker Comments:

____

____

Elevation____________ Aspect____________ Slope___________

Marker Number:_________________________ Install Date:______________ Removal Date:_____________

Marker Type:_______________________________ Marker Substrate:________________________________

Marker Location Information: Height Above Ground:_____(cm) Offset Dist:_____(m) Offset Bearing: _____º

Marker Comments:

____

____

Elevation____________ Aspect____________ Slope_________

Waypoint Tracking Form

Date	Initials	Route	Station	Old Easting	Old Northing	New Easting	New Northing	Error
Explanation								
Date	Initials	Route	Station	Old Easting	Old Northing	New Easting	New Northing	Error
Explanation								
Date	Initials	Route	Station	Old Easting	Old Northing	New Easting	New Northing	Error
Explanation								

SOP #4: Locating and Marking Field Sites (continued).

Oregon Caves Mist Net Site Description

Station Code: ORCA
7.5 Minute USGS Quadrangle:
Location: Oregon Caves
Mileage and Direction from nearest town:
County: Josephine **State**: OR
Ownership: NPS
Contact:
Name(s):
Address:
Phone:
Other info:

Directions from field residence or nearest town
From Ashland: Drive North on I-5 to first Grants Pass exit. Follow Hwy 199 through Grants Pass, Selma, and Kirby. In Cave Junction, turn left at Caves Hwy (second light). Follow Caves Hwy to end (18 + or – miles), continue to Visitor Center parking lot and turn around. Head back in same direction and take first right onto Forest Service access road. Drive 0.6 miles. Stop at Jeep Rd. to the right at crest of the hill. Camp on ridge. Hike up trail for about 0.8 miles to the big tree.

Special Equipment and/or Instructions:
Travel light to site. Use benches rather than carry tables and chair.

Driving Time:

SOP #4: Locating and Marking Field Sites (continued).

ORCA Map